UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,931	07/26/2001	Hilton A. Salhanick	62694-A/JPW/SHS	8253

7590 08/13/2003

Cooper & Dunham, LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER
DAVIS, DEBORAH A

ART UNIT	PAPER NUMBER
1641	12

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/915,931	SALHANICK ET AL.	
	Examiner	Art Unit	
	Deborah A Davis	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-11,17-19,33-35,41,42,47,48,67,68,74-76,88 and 94-135* is/are pending in the application.

4a) Of the above claim(s) *9-11, 17-19, 33-35, 41-42, 47-48, 67-68, 74-76, 88, 102-109, 123-135* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *94-101 and 110-122* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group V, Claims 94-101, 110-122, 132-134 in Paper No. 11 is acknowledged. The traversal is on the ground(s) that examination of all claims would not be a serious burden on the examiner. This is not found persuasive because inventions are distinct for the reasons given below and have acquired a separate status in the art, MPEP § 808.02 recites:

> **Where related inventions as claimed are shown to be distinct under the criteria of MPEP § 806.05 (c) - § 806.05(i), the examiner, in order to establish reasons for insisting upon restriction, must show by appropriate explanation one of the following: (A) Separate classification thereof, (B) A separate status in the art when they are classified together, or (C) A different field of search.**

In the instant case, (A) – The Restriction Requirement under 35U.S.C. § 121 in Paper #11 established distinctness of the inventions and separate classification thereof: (see restriction requirement in Paper #11). (B) The inventions of Groups I-VI would require a separate status in the art when they are classified together; Although the inventions are related to methods of detecting and diagnosing thyroid conditions, they detect for different reagents or the same reagents with different method steps directed to divergent subject matter. Also, classifications in the restriction are illustrative only and do not represent all the classes and subclasses that must be searched for each invention; nor is the search limited to issued US patents, but rather includes foreign patents and applications as well as literature searches.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 94-101 and 110-122 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 94 and 110, step a), "suitable" is vague and indefinite as to what kind of sample is considered "suitable". Step b) "a method which is not a immunoassay" is vague and indefinite because it is unclear as to what method it refers to.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this titl , if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 94-101 and 132-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harsoulis et al (Journal of endocrinology, 1974, Vol. 62, pages 645-655) in view of Schuurs et al (USP#4,016,043).

Harsoulis et al teaches a double antibody assay for measuring the concentration of TSH (thyroid-stimulating hormone) in urine. Urine samples were taken from subjects with well-defined clinical evidence of hypothyroidism and hyperthyroidism (see summary and introduction). The levels of TSH in the hyperthyroid subjects were lower than those of normal subjects and the level of TSH in hypothyroid subjects were higher. Claims 100 to 101 teach specific concentration ranges of TSH in urine that identify hyperthyroidism and hypothyroidism. Harsoulis et al teaches the levels of TSH was detected in concentrated normal urine (see introduction). Harsoulis et al teaches that levels in hypothyroid subjects ranged from (25·1 ± 3·3 μu./h, range 10·8-46·5μu./h) and

levels in hyperthyroid subjects ranged from (2·6 ± 0·2μu./h, range , 1-3·5) and are well within the ranges taught by claims 100 and 101 (see page 652). The amount of detectable agent was bound to TSH in urine was determined utilizing a double antibody I-labeled assay (see Recovery Experiments, page 647).

Harsoulis et al does not teach the exclusion of radioimmunoassay when measuring TSH in urine.

However, Schuurs et al teaches the disadvantages of using a radioimmunoassay in that although they are sensitive, the requirement of special equipment, trained staff, the need for extra safety measures to protect against and the short half-life span of the radioactive labeling element. The possibility of replacing the radioactive label with an enzyme label is proposed (col. 1, lines 25-42).

It would have been obvious to one of ordinary skill in the art to want to modify the teaching of Harsoulis to exclude using an radioimmunoassay and replace it with EIA as taught by Schuurs et al for extra safety measures when using radioactive products in a laboratory setting. Further, the exclusion of using radioactive products requires less disposal time, while the Enzyme Immunoassay provides a very simple, and sensitive assay method. With respect to using unconcentrated urine, one skilled in the art would be motivated to do so because it eliminates purification steps wherein the sample can be assayed upon collection, reducing the time required to perform the assay. The use of concentrated and unconcentrated urine constitute obvious variations in parameters which are routinely modified in the art and have not been described as critical to the practice of the invention.

8. Claims 110-122 and 134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harsoulis et al, in view of Schuurs and Philo et al (USP#5,108,896).

The teaching of Harsoulis et al in view of Schuurs et al are set forth above and differ from the instant claims in not teaching dual detection of hormones.

However, Philo et al teaches a dual analyte enzyme immunoassay for assaying two antigens in a single sample wherein reactions occur simultaneously (see abstract). Philo teaches that immunoassays of the present invention are particularly advantageous for assaying pairs of antigens that are found together in physiological samples such as human serum or urine samples. Labels utilized in the instant assay are fluorescein, rhodamine, isothiocyanate and others (col. 7, lines 12-25). Such immunoassays systems are desirable for assaying pairs of hormones including Thyroxine (T4)/ Thyroid Stimulating Hormone (TSH) and others (col. 4, lines 27-36).

It would have been obvious to one of ordinary skill in the art to modify the assay of Harsoulis et al to include measuring the concentration of Thyroxine (T4) because this hormone is found together with TSH in biological samples such as urine and blood. One skilled in the art would want to measure TSH and Thyroxine in one assay system because if TSH measurements appear discordant with clinical thyroid evaluations, Thyroxine measurements are helpful for identifying inaccurate TSH measurements. Further, dual measurements of TSH/Thyroxine can reduce the time required to run each test separately. With respect to the Thyroxine and TSH measurements of indicated hypothyroidism and hyperthyroidism, it is noted that the prior art has already established

that low levels indicates hyperthyroidism while higher are indicative of hypothyroidism. Absent the evidence to the contrary, applicant's claims are directed to the same premise. The difference in units of measure are viewed as mere optimization of the prior art assays and are parameters varied in methods dependent on reagents and assays.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

A. Andrews et al (USP#4,741,897) teaches Thyroxine analogs and reagents for thyroid hormone assays.

B. Nelson et al (Clinical Chemistry, 1996, Vol. 42 :1, pages 146-154), teaches a thyroxine assay measured in serum.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah A Davis whose telephone number is (703) 308-4427. The examiner can normally be reached on 8-5 Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (703) 305-3399. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1123.

Deborah A. Davis
CM1, 7D16
August 11, 2003

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600
08/11/03